WHAT IS CLAIMED IS:

1. A method for manufacturing FBARs comprising the steps of:

a) preparing a wafer;

b) forming a plurality of sacrificial layer units on the wafer, the sacrificial layer units being spaced apart from one another at regular distances;

c) forming device functional portions on the sacrificial layer units, respectively, each device functional portion having a piezoelectric layer unit, and a plurality of electrodes;

d) forming side walls by the use of a first dry film, the side walls being configured to surround the device functional potions formed on the wafer;

e) forming air gaps by removing the sacrificial layer units, respectively;

f) laminating a second dry film over the side walls, thereby forming roofs of resulting individual packages;

g) hardening the first and second dry films forming the side walls and roofs; and

h) cutting the wafer on the basis of plural vertical and horizontal lines.

2. The method as set forth in claim 1, wherein the step

c) includes the steps of:

c-1) forming a plurality of lower electrodes by applying a conductive material onto the sacrificial layer units, respectively;

c-2) forming a plurality of the piezoelectric layer units by applying a piezoelectric material onto the lower electrodes; and

c-3) forming a plurality of upper electrodes by applying a conductive material onto the piezoelectric layer units, respectively.

3. The method as set forth in claim 1, wherein the step d) includes the steps of:

d-1) forming protective layer units on a plurality of the device functional portions formed on the wafer, respectively;

d-2) laminating the first dry film on the wafer and the protective layer units;

d-3) removing certain portions of the first dry film positioned on the protective layer units, respectively; and

d-4) removing the protective layer units.

4. The method as set forth in claim 1, wherein the step g) is performed by an ultraviolet exposure process.

5. The method as set forth in claim 3, wherein the side

walls are made of a positive dry film, and the protective layer units are made of a negative photo-resist.

6. The method as set forth in claim 3, wherein the side walls are made of a negative dry film, and the protective layer units are made of a positive photo-resist.

7. A method for manufacturing FBARs comprising the steps of:

a) preparing a wafer,

b) dividing the wafer into a plurality of wafer sections by the use of vertical and horizontal lines, and forming a plurality of sacrificial layer units on the divided wafer sections, respectively;

c) forming device functional portions on the sacrificial layer units, respectively, each device functional portion including a piezoelectric layer unit and a plurality of internal electrodes, which are vertically arranged on the sacrificial layer unit, and forming a plurality of external electrodes on the divided wafer sections, the external electrodes being electrically connected to the internal electrodes and positioned close to boundary lines of the wafer sections;

d) forming side walls by the use of a first dry film, the side walls being configured to surround the device functional

potions, respectively;

e) forming air gaps by removing the sacrificial layer units, respectively;

f) laminating a second dry film over the side walls;

g) removing certain portions of the second dry film on the basis of the boundary lines between the adjacent wafer sections;

h) hardening the first and second dry films; and

i) cutting the wafer along the boundary lines between the divided adjacent wafer sections.

8. The method as set forth in claim 7, wherein the step c) includes the steps of:

c-1) forming a plurality of lower internal electrodes and lower external electrodes positioned on the sacrificial layer units by applying a conductive material on the sacrificial layer units, respectively, the lower external electrodes being integrally formed with the lower internal electrodes, so as to be extended to and positioned at the boundary lines between the adjacent wafer sections;

c-2) forming a plurality of the piezoelectric layer units by applying a piezoelectric material onto the lower internal electrodes positioned on the sacrificial layer units; and

c-3) forming a plurality of upper internal electrodes and upper external electrodes positioned on the piezoelectric layer

units, the upper external electrodes being integrally formed with the upper internal electrodes, so as to be extended to the boundary lines between the adjacent wafer sections.

9. The method as set forth in claim 7, wherein the step d) includes the steps of:

d-1) forming protective layer units on a plurality of the device functional portions, respectively;

d-2) laminating the first dry film on the wafer and the protective layer units;

d-3) removing certain portions of the first dry film positioned on the protective layer units, respectively; and

d-4) removing the protective layer units.

10. The method as set forth in claim 7, wherein the step h) is performed by an ultraviolet exposure process.

11. The method as set forth in claim 9, wherein the side walls are made of a positive dry film, and the protective layer units are made of a negative photo-resist.

12. The method as set forth in claim 9, wherein the side walls are made of a negative dry film, and the protective layer units are made of a positive photo-resist.

13. A method for manufacturing an FBAR based duplexer device comprising the steps of:

a) manufacturing one or more FBARs by using a method as set forth in any one of claims 1 to 12;

b) preparing a printed circuit board substrate having one or more conductive patterns;

c) die-bonding one or more the FBARs onto the printed circuit board substrate;

d) electrically connecting electrodes of the FBARs to corresponding ones of the conductive patterns formed at the printed circuit board substrate by bonding wires therebetween, respectively; and

e) forming a protective layer so as to cover the printed circuit board substrate and all of the FBARs.

14. An FBAR (film bulk acoustic resonator) comprising:

a substrate having a certain size;

a device functional portion formed at a center portion of the substrate while defining a certain air gap therein, thereby performing a resonance function by responding to electrical signals applied from the outside;

a plurality of external electrodes formed on an upper surface of the substrate substantially coming into contact with both opposite edges of the upper surface, the external electrodes being electrically connected to the device

functional portion; and

a cap formed on the substrate, the cap including side walls configured to surround the device functional portion and a roof configured to cover over the side walls, the cap being formed by performing light-exposure, developing, and hardening processes of dry films.

15. An FBAR based duplexer device comprising:

FBARs as set forth in claim 14;

a printed circuit board substrate, on which the FBARs are mounted by a die bonding process, the printed circuit board substrate having one or more patterns electrically connected with external electrodes of the FBARs by bonding wires therebetween, respectively; and

a molding portion formed on the printed circuit board substrate by applying a sealing material thereon so as to cover all of the FBARs.